UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
WILSON, ROBERT W

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	09/657,068	BUCKLAND, KENNETH M.
Office Action Summary	Examiner	Art Unit	
	Robert W. Wilson	2616	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 October 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-7,9-16,18-33,35-38 and 40* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-7,9-16,18-33,35-38 and 40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1, 3-7, 9, 10-12, 14-15 & 20 are rejected under 35 U.S.C. 102(e) as being

anticipated by Keller-Tuberg (U.S. Patent No.: 6,504,844).

Referring to claim 1, Keller-Tuberg teaches: the exchange/ISP interface in the data gateway receives a plurality of ingress streams of packets which are IP because they are being sent to the Internet and Internet packets inherently have a destination addresses. The packets are encapsulated into ATM cells by the ATM card in the user PC per col. 4 line 52-col. 6 line 22. The exchange/ISP interface of data gateway aggregates the ATM cells which is at layer 2 which are ingress streams into a combined single traffic stream without regard to the packet destination address or path of the layer 3 IP packet per col. 6 lines 1-5. The combined streams are transmitted to the ISP which is connected to the Internet where routing is performed based upon the IP address per col. 5 line 13-col. 6 line 53.

In Addition Keller-Tuberg teaches:

Regarding claim 3, the exchange/ISP interface in the data gateway receives ingress traffic stream for the subscriber computer or CPE. The data gateways transmits the combined stream via the ISP to the Internet or network with inherent Internet routers per 6 lines 1-6

Regarding claim 4, the source address is verified by the data gateway or validating before they are aggregated into a combined stream per col. 6 lines 6-23.

Regarding claim 5, the inherent computer to ATM interface routes IP packets to the ATM card. The IP packets which have multiple destination addresses are combined or aggregated and sent over a VPI/VCI to the data gateway associated with a specific ISP per col. 5 line 13-col. 6 line 53.

Regarding claim 6, the exchange/ISP interface receives the ingress traffic streams from a plurality inherent ports from customer premise equipment per Figure 1. Segmenting at the CPE ports the IP packets in the ingress traffic streams into asynchronous transport mode (ATM)

adaption layer (AAL) cells (Exchange 32 per Fig 2) wherein the AAL cells include either or both a virtual private interface and virtual connection interface (VPI/VCI) ATM address (User 31 per Fig 2) generated from the IP address of the IP packets (col. 5 line 36-col. 6 line 22). The AAL cells are switched at an inherent network interface port on the exchange/ISP interface per Fig 1. Reassembling the IP packets form the AAL cells at the network interface port (Figure 2) and aggregating the IP packets into the combined traffic stream (Figure 2 and col. 6 lines 1-5)

Regarding claim 7, Figure 2 shows segmenting the IP packets at each CPE port into sets of AAL cells having VP/VC or fixed ATM address associated with the CPE port. Figure 2 shows inherent buffering of the AAL cells at the network interface port based on their ATM address and reassembling the IP packets form completed sets of AAL cells per Fig 2.

Regarding claim 9, the IP packets are segmented into ATM adaption layer five (AAL-5) cells per Fig 2.

Regarding claim 10, the data gateway receives egress traffic streams of cells from the Internet an encapsulates these packets into ATM. The exchange/ISP interface receives the incoming egress traffic including a plurality of IP packets. The exchange/ISP interface takes the VP/VC and de-multiplexes the packet to determine the IP DA for the subscriber and then assigns a VPI/VCI or port # for the subscriber PC or CPE per col. 6 lines 23-53. The data access network transmits the IP packet encapsulated in ATM to the proper VPI/VCI or CPE port based upon destination per Fig 1.

Regarding claim 11, associated table specifies the VP/VC identifier based upon destination addresses. The associated table is as static routing table per col. 6 lines 23-53

Regarding claim 12, the exchange/ISP interface determines VPI/VCI or ATM address for each IP packet based upon the IP DA and adds the VPI/VCI to the ATM header. The ATM cells are AAL-5 which inherently means that they were segmented. The data access network inherently has switches that switch AAL cells to the computer to ATM card or CPE port based upon the VPI/VCI or ATM address. The ATM card or CPE port inherently reassembles the IP packet for delivery per col. 6 lines 23-53.

Regarding claim 14, the ATM address comprises a VPI/VCI address per col. 6 lines 23-53.

Regarding claim 15, the packets from the ISP which routes over the Internet are inherently IP and they are AAL-5 which inherently segments per col. 6 lines 23-53.

Referring to claim 20, the system per Fig 1 performs the method. The ATM card receives packets which are ingress packets being sent to the Internet from the subscriber computer or CPE wherein each packet inherently has a Source Address and Destination address per Fig 1 and per col. 4 line 52-col. 6 line 22.

An inherent router at each ISP receives egress IP packets from the Internet or backbone
network for delivery to the subscriber computers or CPE per Fig 1 and per col. 6 lines 24-53.

The ATM card at the computer interface or CPE interface segments the packets into ingress
AAL-5 with both a VP or VPI and VC or VCI per col. 4 line 52-col. 6 line 22.

The inherent edge router at the ISP has an inherent network interface that segments the IP
packets into ATM cells. The egress AAL cells are provided to customer's ATM card of CPE per
Fig 1 and per col. 6 lines 23-53. The exchange/ISP interface in the gateway aggregates the
ingress traffic streams which are ATM at layer 2 into a combined traffic stream without regard to
any IP address of any IP packet or IP path from any ingress traffic stream which is at the layer 3
level per col. 6 lines 1-5.

Regarding claim 21, ingress segmented into AAL-5 per col. 5 lines 37 and egress segmented into
AAL-5 per col. 6 line 43.

Regarding claim 22, IP packets are inherently reassembled by ISP edge router per Figure 1.
Regarding claim 23, IP packets formed or delinated by ISP edge router per Fig 1.

Regarding claim 24, the source address is verified or validated per col. 6 lines 9-21.

Regarding claim 25, IP packet is discarded if the source address verified is invalid per col. 6
lines 9-21.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 13, 26-33, 35-38 & 40 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Keller-Tuberg (U.S. Patent No.: 6,504,844)

Referring to claim 13, Keller- Tuberg teaches: the method of claim 12
Keller-Tuberg does not expressly call for: buffering AAL cells in each ATM card or CPE port in
the subscriber computer based upon their ATM addresses and reassembling the IP packets from
completed sets of AAL cells.

Keller-Tuberg teaches: the ATM card has an inherent buffer. The ATM card buffers an IP
packet with a destination address and forms an AAL cell with a VPI/VCI and then transmitting
per col. 5 lines 36-40.
It would have been obvious to one of ordinary skill in the art at the time of the invention to
perform the inverse operation of receiving an AAL cell and storing the AAL cell in an inherent
buffer of the ATM card based upon VPI/VCI where inherent disassembly into a IP packet occurs
or reassembling the IP packet from completed AAL cells in order for the ATM card to receive
and convert cells to IP because if the ATM card only transmitted the invention would not be able
to work.

Referring to claim 26, it would have been obvious to one of ordinary skill in the art at the time of
the invention to implement method of claim 1 in software because a method requires a processor
in order to be implemented. It would have been obvious to one of ordinary skill in the art at the
time of the invention to store the software on a computer processable medium in order
executable on a processor.

Referring to claim 38 Keller- Tuberg teaches: the system of claim 37
Keller-Tuberg does not expressly call for: buffering AAL cells in each ATM card or CPE port in
the subscriber computer based upon their ATM addresses and reassembling the Ip packets from
completed sets of AAL cells.

Keller-Tuberg teaches: the ATM card has an inherent buffer. The ATM card buffers an IP
packet with a destination address and forms an AAL cell with a VPI/VCI and then transmitting
per col. 5 lines 36-40.
It would have been obvious to one of ordinary skill in the art at the time of the invention to
perform the inverse operation of receiving an AAL cell and storing the AAL cell in an inherent
buffer of the ATM card based upon VPI/VCI where inherent disassembly into a IP packet occurs
or reassembling the IP packet from completed AAL cells in order for the ATM card to receive
and convert cells to IP because if the ATM card only transmitted the invention would not be able
to work.

In Addition Keller-Tuberg teaches:

Regarding claim 27, the inherent logic in the exchange/ISP interface of the data gateway receives
ingress traffic streams from the computer with ATM cards or CPE per Fig 1 and per col. 4 line
52-col. 6 line 22.

Regarding claim 28, the inherent logic in the exchange/ISP interface of the gateway transmits the
combined stream to an inherent edge router in the ISP network per Fig 1 and per col. 6 lines 23-
53

Regarding claim 29, the inherent logic in the exchange/ISP interface determines if the source
address is validated per col. 6 lines 9-21 & col. 6 lines 38-39.

Regarding claim 30, the inherent logic in the computer to ATM interface routes IP packets to the ATM card which has an inherent network interface port to the computer or access device The IP packets which have multiple destination addresses are combined or aggregated by the ATM card and sent over a VPI/VCI to the data gateway per col. 5 lines 36-col. 6 line 23

Regarding claim 31, the inherent logic in the system receives the ingress traffic streams from a plurality inherent ports from customer premise equipment per Figure 1. Segmenting at the CPE ports the IP packets in the ingress traffic streams into asynchronous transport mode (ATM) adaption layer (AAL) cells (Exchange 32 per Fig 2) wherein the AAL cells include either or both a virtual private interface and virtual connection interface (VPI/VCI) ATM address (User 31 per Fig 2) generated from the IP address of the IP packets (col. 5 line 36-col. 6 line 22). The AAL cells are switched at an inherent network interface port on the exchange/ISP interface per Fig 1. Reassembling the IP packets form the AAL cells at the network interface port (Figure 2) and aggregating the IP packets into the combined traffic stream (Figure 2 and col. 6 lines 1-5)

Regarding claim 32, the inherent logic in the system segments the IP packets into ATM adaption layer five (AAL-5) cells per Fig 2.

Regarding claim 33, the inherent logic in the system as shown in Figure 2 segments the IP packets at each CPE port into sets of AAL cells having VP/VC or fixed ATM address associated with the CPE port. Figure 2 shows inherent buffering of the AAL cells at the network interface port based on their ATM address and reassembling the IP packets form completed sets of AAL cells per Fig 2.

Regarding claim 35, the data gateway receives egress traffic streams of cells from the Internet an encapsulates these packets into ATM. The exchange/ISP interface receives the incoming egress traffic including a plurality of IP packets. The exchange/ISP interface takes the VP/VC and de-multiplexes the packet to determine the IP DA for the subscriber and then assigns a VPI/VCI or port # for the subscriber PC or CPE per col. 6 lines 23-53. The data access network transmits the IP packet encapsulated in ATM to the proper VPI/VCI or CPE port based upon destination per Fig 1.

Regarding claim 36, associated table specifies the VP/VC identifier based upon destination addresses. The associated table is as static routing table per col. 6 lines 23-53

Regarding claim 37, the exchange/ISP interface determines VPI/VCI or ATM address for each IP packet based upon the IP DA and adds the VPI/VCI to the ATM header. The ATM cells are AAL-5 which inherently means that they were segmented. The data access network inherently has switches that switch AAL cells to the computer to ATM card or CPE port based upon the VPI/VCI or ATM address. The ATM card or CPE port inherently reassembles the IP packet for delivery per col. 6 lines 23-53.

Regarding claim 40, the packets from the ISP which routes over the Internet are inherently IP and they are AAL-5 which inherently segments per col. 6 lines 23-53.

5.   Claims 16 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Keller-Tuberg (U.S. Patent No.: 6,504,844) in view of Nagami (U.S. Patent No.: 5,835,70)

Referring to claim 16, Keller-Tuberg teaches: the system per Fig 1, the exchange/ISP interface in
the data gateway receives a plurality of ingress streams of packets which are IP because they are
being sent to the Internet and Internet packets inherently have a destination addresses. The
packets are encapsulated into ATM cells by the ATM card in the user PC per col. 4 line 52-col. 6
line 22. The exchange/ISP interface of the data gateways or means aggregates the ATM cells
which are ingress streams into a combined single traffic stream per col. 5 line 13-col. 6 line 53.
The ISP has the means for receiving Internet or backbone traffic for the subscriber computers or
CPE. The ISP inherently aggregates the IP traffic into a VPI/VCI without regard to IP
destination address. The exchange/ISP interface de-multiplexes the ATM cell in order to
determine the IP destination address subscriber computer. The exchange/ISP uses a table or
static table which is used to translate the IP address into a VPI/VCI or static routing table.

The exchange/ISP interface in the gateway aggregates the ingress traffic streams into a combined
traffic stream without regard to any IP address of any IP packet form any ingress traffic stream
per col. 6 lines 1-5.

Keller-Tuberg does not expressly call for: using IP address to index to in the static routing table

Nagami teaches: using IP address to index a static routing table per col. 13 line 48 and col. 14
lines 22-23 as shown in T3 per Figure 7 per col. 19 lines 44-61

It would have been obvious to one of ordinary skill in the art at the time of the invention to add
the IP indexing in a static routing table of Nagami to the table of the Keller-Tuberg because
utilization of a static routing table with indexing is very fast and efficient of determine the
relationship between a layer 3 destination address and a virtual connection.

In Addition Keller-Tuberg teaches:

Regarding claim 18, the ATM card in the subscriber computer has the means for segmenting the
packets for the Internet or IP packets into AAL cells with a VPI and V.CI. The access network
has an inherent means for switching per Fig 1. The inherently edge router in the ISP has inherent
means for reassembling per Fig 1..

Regarding claim 19, the ATM card inherently segments the packets to the Internet which are IP
into AAL-5 per col. 5 lines 37-44.

Response to Amendment

6.   Applicant's arguments filed 10/2/06 have been fully considered but they are not persuasive.

The examiner respectfully disagrees with the applicant that the reference Keller-Tuberg fails to perform its multiplexing without regard to any path or destination of any packet from any ingress stream as provided as the claimed invention. Keller-Tuberg teaches that the ATM traffic is multiplexed at layer 2 without regard to any path or destination of the IP packet destination address which is at layer 3. The ATM layer 2 packets are sent to the ISP as ATM and converted back to IP where they are routed per col. 5 line 23 to col. 6 line

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Conclusion

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Robert W. Wilson whose telephone number is 571/272-3075.

The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Doris To can be reached on 571/272-7629. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Robert W Wilson
Examiner
Art Unit 2616

RWW
11/30/06

DORIS H. TO
SUPERVISORY PATENT EXAMINER
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